1. A method of identifying a characteristic of a region of a tissue sample, the method comprising the steps of:

(a) applying a contrast agent to a region of a tissue sample;

(b) obtaining an optical signal from the region within a predetermined period of time that is optimal for observing a characteristic of the tissue; and

(c) identifying the characteristic of the region based at least in part on the optical signal.

2. The method of claim 1, wherein the optical signal comprises a reflectance intensity.

3. The method of claim 1, wherein the optical signal comprises a fluorescence intensity.

4. The method of claim 1, wherein the optical signal comprises one of a group consisting of fluorescence, reflectance, Raman, infrared, and video signals.

5. The method of claim 1, the method further comprising the step of determining the period of time in step (b) using linear discriminant analysis of a reference set of data.

6. The method of claim 1, the method further comprising the step of determining the period of time in step (b) using nonlinear discriminant analysis of a reference set of data.

7. The method of claim 1, the method further comprising the step of determining the period of time in step (b) using at least one of the group consisting of neural network analysis, principal component analysis, and decision tree analysis.

8. The method of claim 1, wherein the characteristic is a state of health.

9. The method of claim 8, wherein the state of health comprises at least one of the group consisting of normal squamous tissue, normal columnar tissue, metaplasia, immature metaplasia, mature metaplasia, CIN 1, CIN 2, CIN 3, CIS, and cancer.

10. The method of claim 1, wherein the identifying of step (d) comprises determining whether the region of the tissue sample is CIN 2+ tissue.

11. The method of claim 1, wherein the contrast agent comprises acetic acid.

12. The method of claim 1, wherein the contrast agent is selected from a group consisting of formic acid, propionic acid, butyric acid, Lugol's iodine, Shiller's iodine, methylene blue, toluidine blue, indigo carmine, indocyanine green, and fluorescein.

13. The method of claim 1, wherein the tissue sample comprises cervical tissue.

14. The method of claim 1, wherein the tissue sample comprises at least one of a group consisting of colorectal tissue, gastroesophageal tissue, urinary bladder tissue, lung tissue, and skin tissue.

15. The method of claim 1, wherein the tissue sample comprises epithelial cells.

16. A method of identifying a characteristic of a region of a tissue sample, the method comprising the steps of:

(a) applying a contrast agent to a region of a tissue sample;

(b) obtaining at least one reflectance signal from the region of the tissue sample within a predetermined period of time that is optimal for observing a characteristic of the tissue;

(c) obtaining a fluorescence signal from the region of the tissue sample within the predetermined period of time; and

(d) identifying a characteristic of the region based at least in part on the fluorescence signal and at least one of the at least one reflectance signals.

17. The method of claim 16, the method further comprising the step of obtaining a video signal from the region of the tissue sample within the predetermined period of time.

18. The method of claim 17, wherein step (d) comprises identifying a characteristic of the region based at least in part on the fluorescence signal, at least one of the at least one reflectance signals, and the video signal.

19. The method of claim 16, wherein step (b) comprises obtaining two reflectance signals from the region of the tissue sample within the predetermined period of time.

20. A method of determining an optimal period of time for observing a state of health of a region of a tissue sample, the method comprising the steps of:

(a) obtaining a first set of optical signals from tissue samples of a first known state of health, each of the optical signals having associated with it a time elapsed from the application of a contrast agent;

(b) obtaining a second set of optical signals from tissue samples of a second known state of health, each of the optical signals having associated with it a time elapsed from the application of a contrast agent;

(c) categorizing each member of the first set of optical signals and each member of the second set of optical signals into one of a plurality of bins according to its associated time elapsed from the application of the contrast agent;

(d) for each of the plurality of bins, determining one or more differences between the optical signals from the first set and the optical signals from the second set; and

(e) determining an optimal period of time for observing a state of health of a region of a tissue sample by identifying at least one bin from step (d) in which the absolute values of the one or more differences are substantially maximized.

21. The method of claim 20, wherein the one or more differences are weighted differences.

22. The method of claim 20, wherein the one or more differences in step (d) are determined using a discrimination function.

23. The method of claim 20, wherein step (d) comprises using multivariate analysis to develop a classification model for each of the plurality of bins.

24. The method of claim 23, wherein step (e) comprises determining a measure of classification accuracy for each of the plurality of bins.

25. The method of claim 20, wherein the first known state of health is CIN 2+ and the second known state of health is NED.

26. The method of claim 20, wherein the first known state of health is CIN 2/3 and the second known state of health is NED.

27. The method of claim 20, wherein the first known state of health is CIN 2+ and the second known state of health is non-CIN 2+.

28. A method of identifying a characteristic of a region of a tissue sample, the method comprising the steps of:

(a) applying a contrast agent to a region of a tissue sample;

(b) obtaining a measure of change of at least a first optical signal from the region of the tissue sample;

(c) determining whether the measure of change satisfies a predetermined criterion for optimal observation of a characteristic of the tissue;

(d) obtaining at least a second optical signal from the region of the tissue sample when the criterion in step (c) is satisfied; and

(e) identifying a characteristic of the region based at least in part on at least one of the signals obtained in step (d).

29. The method of claim 28, wherein step (b) comprises obtaining a measure of change of at least one of a fluorescence signal, a reflectance signal, and a video signal.

30. The method of claim 28, wherein step (d) comprises obtaining at least one of a fluorescence signal, a reflectance signal, and a video signal.

31. The method of claim 28, wherein step (d) comprises obtaining a fluorescence signal, a reflectance signal, and a video signal.

32. The method of claim 28, wherein step (d) comprises obtaining a fluorescence signal, two reflectance signals, and a video signal.

33. The method of claim 28, wherein the predetermined criterion is a threshold value of the measure of change obtained in step (b).

34. The method of claim 28, wherein the predetermined criterion is a range of values of the measure of change obtained in step (b).

35. A method of identifying a characteristic of a region of a tissue sample, the method comprising the steps of:

(a) applying a contrast agent to a region of a tissue sample;

(b) obtaining a measure of rate of change of at least a first optical signal from the region of the tissue sample;

(c) determining whether the measure of rate of change satisfies a predetermined criterion for optimal observation of a characteristic of the tissue;

(d) obtaining at least a second optical signal from the region of the tissue sample when the criterion in step (c) is satisfied; and

(e) identifying a characteristic of the region based at least in part on at least one of the signals obtained in step (d).

36. The method of claim 35, wherein step (b) comprises obtaining a measure of rate of change of at least one of a fluorescence signal, a reflectance signal, and a video signal.

37. The method of claim 35, wherein step (d) comprises obtaining at least one of a fluorescence signal, a reflectance signal, and a video signal.

38. The method of claim 35, wherein step (d) comprises obtaining a fluorescence signal, a reflectance signal, and a video signal.

39. The method of claim 35, wherein step (d) comprises obtaining a fluorescence signal, two reflectance signals, and a video signal.

40. The method of claim 35, wherein the predetermined criterion is a threshold value of the measure of rate of change obtained in step (b).

41. The method of claim 35, wherein the predetermined criterion is a range of values of the measure of rate of change obtained in step (b).